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ABSTRACT

This study dealt with the perceived parental attitudes of affection, physical contact, consistency-trust, security and perceived parental locus of control orientation as possible determinants of locus of control orientation in high school seniors. A second phase was concerned with the relationship of perceived parental locus of control orientation and of subject locus of control orientation to the variables of achievement and extracurricular activities. The results indicated that female internals perceive their parents as being more nurturant than do female externals. For males no relationships between locus of control orientation and parental attitudes were found. In the second phase male internality was found to be associated with higher grade point average and scores on achievement tests and female internality was associated with higher achievement scores. For both males and females parental internality was associated with some of the achievement measures. No relationships were found between locus of control scores and extracurricular activities. (Author)

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ANTECEDENTS AND CORRELATES OF LOCUS OF CONTROL
IN HIGH SCHOOL STUDENTS

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The role of reinforcement in the determination of behavior has been an active topic of psychological research for many years. Reinforcement is an integral construct in many theories of socialization and learning. Rotter(1954) was one of the first to point out that the perception of reinforcing events is also important, i.e., external reinforcing events are not perceived in the same manner by all individuals. In order for an external event to serve as a reinforcer and thereby strengthen behavior, a causal relationship should be perceived between the individual's behavior and his resultant reward. Therefore, the individual's perception of the external situation has an important influence on his expectancy of reinforcement, which in turn affects how he behaves. Rotter (1954) considers this concept of expectancy with respect to the effectiveness of reinforcement. According to Rotter, the potential for the occurrence of a behavior will result in reinforcement and the value the individual places upon the expected reinforcer. Rotter and his associates have developed the notion of a generalized expectancy, termed locus of control, which is seen to operate across a large number of situations. This perceived locus of control of reinforcement varies along a continuum from an external to internal orientation. As Rotter states:

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When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the complexity of the forces surrounding him. When the event is interpreted in this way by an individual we have labeled this a belief in external control. If the person perceived that the event is contingent upon his behavior or his relatively permanent characteristics we have termed this a belief in internal control. (p. 1)

The potential of this generalized expectancy to influence behavior across a wide variety of situations has led to considerable research on the relationship of locus of control to other variables. In general, this research, numbering well over 300 studies, (Mac Donald, 1971) has been quite fruitful (Rotter, 1966; Lefcourt, 1971; Joe, 1971).

From the results indicating the usefulness of the construct of locus of control in predicting behavior, it follows that an important task is the investigation of the antecedent conditions giving rise to specific orientations. Previous research has not clearly delineated the connection between an individual's present locus of control orientation and the antecedents responsible for his present orientation. A set of possible antecedents derives from the assumption that parents are important in shaping the personalities and behaviors of their children. From this perspective it is expected that parental attitudes in general and parental locus of control specifically may be important determinants of the locus of control orientation of their children. Before specific hypotheses are formulated, it is necessary to review briefly previous research procedures and results pertinent to this contention.

In measuring a particular behavior three different methods may generally be used. First, the individual whose behavior is under scrutiny may be directly (or indirectly) asked to report on his behavior. Secondly, an impartial observer may directly evaluate the person's behavior by watching him in action. Thirdly, a person who is well acquainted with the subject may be asked to assess the subject's behavior. The method chosen depends, of course, on the purpose for which the information is intended. Many researchers whose purpose is to determine the relationships between parental behaviors, attitudes and the like, and those of their children have used the third method (Doster & Strickland, 1969; Heilbrun & Gillard, 1966; Davids & Hainesworth, 1967). The children are asked for their perceptions of parental characteristics rather than obtaining actual parental self report descriptions. The rationale for this approach is that since one is dealing with the effect of parental characteristics on a child, the way in which a child perceives these characteristics will have a more significant effect on his subsequent behavior than what the parent actually does.

The above approach has had success in predicting a number of behaviors. Relevant to the present study, this procedure has been used with some success in the area of parental antecedents of locus of control. Four different studies (Katovsky, Crandall & Good, 1967; Phares & DAVIS, 1969; Shore, 1968; MacDonald, 1971b) have found that parental attitudes, as measured by parental self report measures, are less related to children's locus of control orientation than are children's perceptions or observer ratings of parental behavior. For example, in one of these studies (Shore, 1968), children's perceptions of parental behavior and actual parental attitudes were jointly

assessed. The resulting data indicated that children's perceptions of parental behavior were more strongly related to children's locus of control than were reported parental attitudes. Additionally, children's perception of adult behavior and parental attitudes were unrelated. On the basis of the above mentioned studies and logical reasoning it was decided to use perceived parental locus of control and attitudes rather than actual responses of parents.

Previous research on parental antecedents of locus of control has employed all three methods of measuring parental behaviors. Most of this work has dealt with the relationship of parental attitudes to children's locus of control. Data from these studies suggests that different parental attitudes may facilitate the development of an internal locus of control at different stages in a child's life. Generally, it has been found that in childhood a "positive parent" cluster (that is, parent-child relationships which are primarily warm, protective, positive and less critical) is associated with internality (Chance, 1965; Davis & Phares, 1961; Katovsky, Crandall & Good, 1967; Shore, 1968). However, other data are inconsistent with these findings.. For example, some of the results tentatively suggest (Katovsky, Crandall & Good, 1967; Soloman, Houlihan, Busse & Parelus, 1971) that some lack of affection and nurturance or mild hostility on the father's part is related to female internality, and that some stress on females (Reimanis, 1971) is related to greater internality. These results additionally suggest that the father may play an important role in determining the locus of control orientation of the female.

More pertinent to the present study, when locus of control is evaluated in young adulthood, it appears that the warm, positive attitudes of parents are less important. Davis (1966) found

in older children, using direct observation of the parent-child relationship in a controlled task-oriented situation, no relationship between locus of control and the parents' affective response to the child, the distribution of power in the family, and the extent to which self-reliance was permitted. He did find, however, that on a decision-making task parents of externals exerted more pressure on their children to comply with their demands, were more likely to disagree on standards and expectations associated with child behavior and to differ from one another in their attitudes toward child rearing. These findings were interpreted as showing that externality is associated with parental inconsistency.

In other work with older subjects, Crandall (1971) found internality in young adulthood associated with less maternal involvement, less maternal affection, and more criticality. In additional studies reported by Crandall (1971) with young adults, mothers of internals were observed as encouraging independence more than mothers of externals. The parents of internals were also observed to be less restrictive of the child's activity, clearer and more consistent in their feedback as well as in their regulations and family schedules, and had more often engaged in task activities with their children.

The present study deals with the perceived parental attitudes of affection, physical contact, consistency, trust, security, and perceived parental locus of control orientation as possible determinants of locus of control orientation in high school seniors. How to predict the relationship between these variables and the subject's locus of control orientation is a most difficult task. The two studies (Davis, 1969; Crandall, 1971) using somewhat comparable age groups

are by no means definitive in their findings, especially when it is considered that these investigations use different methodologies, different socio-economic groups, and provided little information concerning fathers' attitudes. It is also true that the bulk of work done with younger subjects suggests quite a different set of parental attributes than do the results of Crandall's and Davis' work. However, since these two studies are the only ones using comparable age groups they are used as the basis for hypothesizing the results of phase one of the present study. That is, high perceived ratings on the nurturance measures of affection, physical contact, and security will be positively associated with externality, while perceived ratings on consistency-trust will be positively associated with internality.

To this author's knowledge, no previous research has compared perceived locus of control orientations of parents to that of their children; therefore, no concrete hypothesis concerning this relationship can be made.

There is a second phase of the present study, the purpose of which is to relate both the perceived locus of control of parents and the subjects' own locus of control to the relevant variables of achievement and involvement in extracurricular activities. Although there is no published research to this date on the relationship of perceived parental locus of control to achievement and involvement in extracurricular activities, studies have been done relating subject's locus of control orientation to these same variables. In this regard, it has been consistently found that locus of control is a more consistent predictor of achievement for males than for females

(Nowicki & Roundtree, 1971; Nowicki & Strickland, 1972; Crandall, Katovsky & Crandall, 1968). However, Nowicki and Roundtree (1971) found that internality predicted female, but not male involvement in extracurricular activities. On the basis of these findings, for the present study, internal locus of control is hypothesized to be related to higher achievement in males and more involvement in extracurricular activities for females. It is possible that perceived parental locus of control will also be related to achievement and involvement in extracurricular activities, but no hypothesis can be made. For these relations the main intent of the study is exploratory.

In summary, it is expected that externality of subjects will be positively related to higher ratings of nurturance as denoted specifically by perceived parental affection, physical contact, and security, while internality will be related to high ratings on consistency-trust. Subjects' internality is expected to be associated with high achievement in males and more involvement in extracurricular activities in females. No definite hypotheses were made concerning the relationship of perceived parental locus of control and the subjects' locus of control orientation or achievement and involvement in extracurricular activities. This phase of the study was exploratory.

Method

Subjects. The subjects (n=112, 58 males, 54 females) for this study came from the 12th grade class at a suburban high school located in a county bordering a large southern metropolitan area. All subjects were white. The majority of the subjects were members of the lower-middle class..

Measures. Locus of control of the subjects was measured by the Nowicki-Strickland Personal Reaction Survey. This is a paper and pencil test consisting of 40 questions to which the subject must answer "Yes" or "No". The test yields a generalized expectancy of reinforcement with high scores being associated with externality. Reliability estimates are satisfactory ($N=1,732$, grades 3-12, test-retest reliabilities from .63 to .82 and internal consistency reliabilities from .63 to .79). Scores on this scale are significantly related to other measures of locus of control (Nowicki & Strickland, 1972).

Perceived locus of control will be evaluated by having each student fill out an adult form of the Nowicki-Strickland Personal Reaction Survey the way he perceives each of his parents would. This test is similar to the children's form, differing only in the rewording of some of the items ($n=6$) to make them appropriate for adults (Nowicki & Duke, 1972).

Perceived parental attitudes will be measured by a modification of the Parent-Child Interaction Scale (Schaeffer & Bell, 1958). In its modified form this scale consists of measures of perceived parental attitudes on the following dimensions: affection, physical contact, security, and consistency-trust. Each of these dimensions is measured by a Likert scale, in which there are five statements describing differing degrees of parental involvement.

Achievement is measured by the scores the students received on a series of state-wide, school administered, standardized achievement tests, given in the fall of 1971, and by grade point average.

Extracurricular activities will be measured by counting the number of activities, and offices each student lists on a demographic information sheet. This sheet will also request the subject's age, sex, grade point average, and whether or not he plans to attend college.

Procedures. The students were told that the author was interested in studying the opinions and attitudes of students and their parents, and how these are related to the student-parent relationship and the student's achievement and extracurricular activities. They were assured that the results will be used for research purposes only and their responses will remain anonymous (names being eliminated after all relevant data is gathered). Following this explanation the students were given three locus of control tests, two of which were the adult form. They were asked to complete the first as themselves, the second as they perceived their mothers would, and the third as they felt their fathers would. These packets were then collected and the students given the modified Parent-Child Interaction Scale and asked to complete it. At this same time the subjects also received the demographic information sheet. Data on achievement was gathered later from the school's records.

Results

Although an analysis of variance approach to analyzing these data would have been preferred, the mean scores for the male and female groups tended to differ. Males generally scored in a more external ($X = 13.20$, $sd = 5.87$) direction than females ($X = 11.65$, $sd = 4.31$). This presented difficulties separating males and females into comparable internal and external control groups. The alternative of using extreme

groups drastically reduced the usable number of subjects and still did not solve the problem of sampling from uncomparable groups. For these reasons a correlational approach was chosen to deal with this data.

The results for phase one of the study, summarized in Table I, showed partial support of the hypotheses. In essence, the results indicate that female internals perceive their parents as more nurturant than do female externals. It was found that for females, internality as opposed to externality, was related positively to perceiving fathers as more affectionate, expressing more physical love, being more trusting and consistent, and offering more security, and to perceiving mothers as more physically affectionate and trusting.

None of the correlations among male locus of control and perceived parental behaviors reached statistical significance, although the correlations for perceived maternal and paternal consistency-trust approached significance at the .10 level for a two-tailed test.

For both males and females, correlations between their expressed locus of control and their perceived mother and father locus of control were highly significant in all cases, indicating that internals and externals perceived their parents as having somewhat the same locus of control orientation.

The results pertinent to the second phase of the study also partially supported the hypotheses (Table 2). For achievement it was found, as expected, that internality was positively related to greater achievement as measured by grade point average and standardized achievement test scores for males. For females, it was unexpectedly found that internality was also positively related to grade point

average as well as tending to be positively related to standardized achievement test scores.

In terms of extracurricular activities, locus of control orientation was not related to number of activities, or number of offices held. This result is consistent with previous results for males, but is inconsistent with previous results for females.

Lastly, males' plans to attend college were significantly correlated with internality, whereas for females no relationship was found.

The results from the analysis of the relationship between perceived paternal locus of control and the subjects' behaviors indicated that for males, perceived maternal internality was associated with higher grade point average and plans to attend college and perceived paternal internality was associated with plans to attend college. For females, perceived maternal internality was significantly associated with higher scores on the composition achievement test, and perceived paternal internality was associated with higher scores on all standardized achievement measures.

Discussion

The results from the first phase of the study suggest that internal females perceive their parents as warmer, more loving, and more trusting and consistent than do their external peers. The differences between the internal and external females are more pronounced for perceived paternal than for maternal behaviors.

This data, with the exception of the significant relationship of consistency-trust to internality is inconsistent with Crandall's and Davis's data. There are several possible explanations which may be offered for this inconsistency. The lack of replication may be due

in part to the use of different measures of locus of control (Davis used the Rotter I-E, Crandall, the Intellectual Achievement Responsibility Scale, and the author, in the present study, used the Nowicki-Strickland Personal Reaction Survey) and of parental behaviors, and in part to differences in subject populations (e.g. Crandall's population was upper middle class and test sophisticated). Additionally, Crandall's study dealt mainly with observed maternal variables.

Perhaps the most viable explanation, however, is that the inconsistencies are due to the use of perceived rather than observed or self reported parental behaviors. It has been shown that a child's subjective impression of his parents, based on a lifetime of experience may be quite different from either an observer's objective observations in a laboratory situation, or a parent's self report. Crandall observed mothers of internal young adults to encourage independence, to be less restrictive of the child's activity and to be clearer and more consistent in their feedback and regulations than mothers of externals. To the objective observer, or in a parent's self report, attitudes such as these may be taken as evidence of less maternal involvement, affection or more criticality. However, to a child these attitudes may not be perceived in this fashion if they stem from a relationship which is basically warm and trusting. That is, if a child feels that he has good, secure parental relationships, then, parental criticism, especially constructive criticism, or what an observer might call lack of involvement, will not be construed as rejection and, therefore, will not effect the affective value of his parental relationships. In fact, these parental behaviors might contribute to his establishment of a separate, internal identity.

• Viewed from a theoretical perspective, especially when data

from other age groups is considered, this explanation seems even more plausible. An internal person is one who feels that his behavior has some effect upon his environment and the reinforcements he receives. It seems that such an expectancy is most likely to develop and maintain itself in a warm, secure atmosphere where the effect of one's behavior can be reliably predicted. This, indeed, is what is indicated by the results of studies done using young children, and it does not seem likely that a dichotomy would exist between parental behaviors contributing to internality in childhood and to those contributing to internality in young adulthood. Additionally, a recent study by MacDonald (1971b) using college students lends support to this post hoc explanation. MacDonald's subjects completed the Rotter I-E scale along with a Perceived Parenting Questionnaire. Consistent with data from this study, the results indicated that perceived parental nurturance was positively related to internality as was parental consistency in maintaining standards for children's behavior. Lastly, this idea is consistent with Lefcourt's (1972) conclusion which was based upon a review of parental antecedents of locus of control that "a warm accepting home with predictable, consistent standards is more commonly reported by internal children and adolescents than their external counterparts, though expressions of parental attitudes about the same elements seem unrelated to the child's locus of control" (p.34).

In any case, this study suggests there are definite perceived parental characteristics related to locus of control for females. These characteristics suggest that there may be different parental

behaviors antecedent to and associated with the female child developing a particular type of generalized expectancy of reinforcement. The results also serve to emphasize the importance of the father's role in the upbringing of a female child. These findings should be intensely investigated and replicated, for if true they may have important implications for childrearing.

For males, locus of control was not significantly related to perceived parental characteristics although there was a definite trend for internality to be associated with the perceived positive parental attitude of consistency-trust. While the lack of significant correlations may be interpreted as evidence that internal and external males do not perceive their parents differently, a simpler explanation is that the males did not approach this portion of the task with the same intensity as did females. Evidence for this explanation is that the males perceived parental locus of control scores (mother with father) were found to have a .83 correlation, in contrast to a .50 correlation between perceived parental scores for females. This indicated that the males as a group did not differentiate between their parents to the same extent as did females. Additional subjective evidence for the idea that males did not approach the task as seriously as females, is that observationally females tended to take a longer period of time to complete the task, and males tended to "wise crack" and joke around more during the testing session. Differences in male and female response may have been due to the use of a female experimenter or to a generalized tendency of high school males to have a rather skeptical view of studies of this sort. This suggests future studies should perhaps use two groups, and two

experimenters, one male and one female.

In the second phase of the study, internal locus of control was significantly related to greater achievement for males as well as to plans to attend college. For females higher achievement was related to internality only when grade point average was used as the dependent measure, although there appeared to be a trend for the relationship between locus of control and standardized achievement scores to be in a similar direction. The finding, that internality is associated with higher grade point averages, is inconsistent with previous research. However, it is consistent with theoretical predictions based on an understanding of the concept of a generalized expectancy of reinforcement. Why these females are acting in a theoretically consistent manner, and in a manner similar to the more predictable males, is an important question. Perhaps the internal female is becoming more aware of her changing status and the greater opportunities for the future created by higher achievement in high school, or perhaps it is becoming culturally approved for a female to express an internal orientation. It is intriguing to speculate upon why grade point average tends to be more strongly related to internality than are standardized test scores. Grade point average is a more subjective measure than is a standardized achievement test, and as such reflects a great deal more than the accumulation of knowledge. Perhaps internal females are more conscientious students than externals or perhaps they possess certain personality characteristics which make them better liked by teachers. In this regard, work with younger children indicated that locus of control was related to measures of social desirability. It may be this style of behavior that teachers are responding to in giving internal females higher grades.

In another area, internality was not related to participation in extracurricular activities for either sex. This lack of relationship is surprising for females, since Nowicki and Roundtree (1970), using the senior class of this same school, three years previously, found that extracurricular activities and internality were significantly related. The failure to replicate female behavior may be due to several factors. It may be the result of the changing role of females in our society with the emphasis on female liberation, or to a change in the make-up of this particular population. In this regard the school has grown dramatically over the last three years (nearly 70% increase) resulting in a change from a primarily rural to a more suburban population. These changes may have affected the type of female student attending the school. In support of this is the finding that females were significantly more internal than the males in the present study and significantly more internal than the females in the 1969 sample. Males, on the other hand, scored approximately at the same level in 1972 as they had in 1969. Moreover, the association of internality with higher achievement for females also supports the idea that significant changes have occurred. It seems that for females their internal orientation is expressing itself in higher grade point averages, rather than through social activity.

The purely exploratory analysis of the relationship between perceived parental locus of control and the subject's behavior yielded some interesting results. For males, perceived maternal internality was positively associated with higher grade point average and plans to attend college, while perceived paternal internality was positively associated with plans to attend college. For females,

perceived maternal internality was positively associated with higher scores on the achievement test measuring composition, and paternal internality was positively associated with higher scores on all standardized achievement measures. The most interesting aspect of these results is that female achievement could be more accurately predicted from perceived paternal, and to a lesser degree, perceived maternal locus of control, than from personal locus of control scores. It seems as though female achievement behavior is more predictable from perceived parental locus of control orientation than it is from their own expressed orientation. It may be that expressing the perceived locus of control orientation of parents is a purer measure of the females' locus of control orientation, than is the personal measure, which may be more prone to confounds such as social desirability. This possibility should be examined in further research.

In any case results from this study should be tested out in settings where both actual and perceived parental attitudes may be jointly assessed. In this way parent behaviors associated with and antecedent to developing a particular locus of control orientation may be identified, later perhaps forming the basis for change in school programs or incorporated into general child rearing practices.

TABLE 1

Correlations among child locus of control and parental variables,
extracurricular activities, grade point average
and plans to attend college

Variables	Females N=54			Males N= 58		
	Correlation	Mean	SD	Correlation	Mean	SD
Perceived Maternal Locus of Control	.38**	11.48	4.60	.56**	12.80	5.12
Perceived Paternal Locus of Control	.42**	12.12	5.25	.41**	12.40	5.35
Perceived Maternal Affection	-.09	4.57	.64	.41**	4.58	.64
Perceived Paternal Affection	-.37**	4.24	.90	-.07	4.22	.97
Perceived Maternal Physical Contact	-.31**	3.16	1.31	-.11	3.17	1.22
Perceived Paternal Physical Contact	-.40**	2.90	1.34	-.09	2.31	1.13
Perceived Maternal Trust	-.34**	3.98	1.28	-.16	4.13	.98
Perceived Paternal Trust	-.54**	3.83	1.36	-.19	3.91	1.33
Perceived Maternal Security	-.12	4.11	1.14	-.10	4.31	.88
Perceived Paternal Security	-.42**	4.00	1.29	-.10	3.70	1.24
Extracurricular Activities	-.12	11.94	10.17	.07	8.34	7.24
No. of Offices Held	-.18	2.24	8.44	-.16	.44	.96
Grade Point Average	-.28**	4.81	1.10	-.29*	4.36	1.05
Plans to Attend College	.02	.82	.85	-.33**	11.08	.90

* p>.05

**p>.01

Female locus of control orientation, X=11.65, SD=4.31

Male locus of control orientation, X=13.20, SD=5.87